

## CHAPTER 7 AIR RECEIVER

### 7-1. Functions.

The air receiver dampens pulsations entering the discharge line from the compressor; serves as a reservoir for sudden or unusually heavy demands in excess of compressor capacity; prevents too frequent loading and unloading (short cycling) of the compressor; and separates moisture and oil vapor, allowing the moisture carried over from the aftercoolers to precipitate. Air receivers shall be constructed in accordance with ASME Boiler and Pressure Vessel Code Section VIII.

### 7-2. Determining receiver size.

After the air compressor capacity has been established, the appropriate receiver size can be determined. Table 7-1 lists the sizes of air receivers in common use and the compressor capacities recommended for each receiver size, at pressures of 40 to 125 psig.

Table 7-1. Recommended receiver sizes  
for various compressor capacities

Compressor Capacity (cfm) (40-125 psig Operating Press.)	Receiver Nominal Diameter (in)	Receiver Shell Length (ft)	Receiver Volume (ft <sup>3</sup> )
45	14	4	4-1/2
110	18	6	11
190	24	6	19
340	30	7	34
570	36	8	57
960	42	10	96
2,115	48	12	151
3,120	54	14	223
4,400	60	16	314
6,000	66	18	428

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### 7-3. Installation.

The receiver will be installed on an equipment pad to keep it dry. Adequate space around the unit is needed for draining, inspection, and maintenance. When the receiver is located outside, the safety valve and pressure gauge will be installed indoors to prevent freezing, and the associated outdoor piping will be heat traced and arranged to drain back to the receiver. Where automatic condensate traps are used with receivers located outdoors, the traps will be located indoors and the outdoor piping heat traced or the traps and piping located outdoors will be provided with electric heat tape to protect them from freezing.